

## **REMARKS/ARGUMENTS**

The present Amendment is responsive to the non-final Office Action mailed March 5, 2010 in the above-identified patent application.

Claims 12, 14-22 and 24 are the claims currently pending in the present application.

Claims 12, 14 and 22 are amended to clarify features recited thereby. These amendments are fully supported by Applicant's disclosure. With respect to the recitation in claim 12 that the net average group delay dispersion is constant see, for example, Specification, page 4, paragraph bridging pages 4 and 5. With respect to the amendments to claims 14 and 22 see, for example, page 20, lines 3-10 and Fig. 4.

### ***Rejection of Claims 12, 22 and 23 under 35 U.S.C. § 112, First Paragraph***

Claims 12, 22 and 23 are rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with a written description requirement on the ground that the recitation generating laser pulses having an energy of at least 100 nJ is not taught by the disclosure since the Specification discloses operation over 200 nJ.

The Specification at page 1 starting at line 20, states that it is desirable to generate laser pulses with an energy of 100 nJ. Further, the Specification starting on the last line of page 23 gives an example of an energy pulse higher than 200 nJ. Thus, the Specification does support the 100 nJ recitation. However, in the interest of expediting prosecution of the application, claim 12 is amended.

Regarding claim 22, the Office Action alleges that a bandwidth of a laser pulse greater than 180 nm is not taught by the disclosure. It is respectfully submitted that the Specification at page 20, lines 3-17 does disclose the greater than 180 nm bandwidth range. However, claim 22 is amended in the interest of expediting prosecution of the application. This amendment is fully supported by Applicant's disclosure, see, for example, page 20, lines 3-10 of the Specification.

Claim 23 is canceled without prejudice or disclaimer and therefore the rejection is moot as to this claim.

***Rejection of Claims 12, 14-16 and 18-23 under 35 U.S.C. § 103***

Claims 12, 14-16 and 18-23 are rejected under 35 U.S.C. § 103 as being obvious from Cho et al. ("Generation of 90-nJ pulses with a 4-MHz repetition-rate Kerr-lens mode-locked Ti:Al<sub>2</sub>O<sub>3</sub> laser operating with net positive and negative intracavity dispersion," Opt. Lett. 26, 560-562 (2001)) in view of Szipocs et al., U.S. Patent No. 5,734,503 and Proctor et al. ("Characterization of a Kerr-lens mode-locked Ti: sapphire laser with positive group-velocity dispersion" Opt. Lett. 18, 1654-1656 (1993)).

The present invention, as claimed in claim 12 is directed to short-pulse laser arrangements with high energies, for example greater than 200 nJ.

Claim 12 requires a short-pulse laser arrangement comprising a resonator in operation having a positive net average group delay dispersion over an operating wavelength range and the net average group delay dispersion is constant over the operating wavelength range, the resonator in operation generating laser pulses having an energy higher than 200 nJ.

Attached is a Declaration under 37 C.F.R. § 1.132 executed by Mr. Frank Wise, one of the authors of the Proctor reference cited in the Office Action. Professor Wise explains in the Declaration that the Proctor reference examines low-energy laser arrangements, and a low-energy laser pulse has different effects than short-pulse laser arrangements comprising a resonator generating energy output in the high energy range, such as energy over 200 nJ. As explained in the Amendment filed on December 17, 2009, a person of ordinary skill in the art would have understood that high energy laser pulse oscillation using dispersive mirrors introduce additional perturbation along the path of the laser pulses, and this would make the disclosure provided in the Proctor reference seem irrelevant to a person of ordinary skill in the art when considering high-energy oscillation. The present invention as claimed in claim 12 addresses the disadvantageous limiting non-linear optical effects, as discussed, for example, at page 5 near the top. A person of ordinary skill in the art would have had no suggestion or motivation for combining teachings in the references directed to low-energy lasers with teachings of lasers in the high-energy ranges. Accordingly, it is respectfully submitted that Applicant's invention as claimed in claim 12 would not have been obvious based on the cited references.

Claims 14-16 and 18-23 depend from claim 12 and are therefore patentably distinguishable over the cited art for at least the same reasons.

*New Claim*

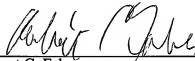
New claim 24 is added so as more fully to claim patentable aspects of Applicant's invention. New claim 24 is fully supported by Applicant's disclosure see, for example, Specification, page 20, lines 6-10 and Fig. 4 of the Drawings.

New claim 24 depends from claim 12 and is therefore patentably distinguishable over the cited art for at least the same reasons.

In view of the foregoing discussion, withdrawal of the rejections and allowance of the claims of the present application are respectfully requested.

THIS CORRESPONDENCE IS BEING  
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